

CLAIMS

What is claimed is:

- 1 1. A process for preparing pitch with optically anisotropic content, comprising the steps of:
2 mixing synthetic mesophase pitch and petroleum-derived isotropic pitch to prepare a
3 pitch mixture; and heat-soaking the resultant pitch mixture.
- 1 2. The process of claim 1, wherein the pitch mixture includes from about 10 % to about 70 %
2 by weight synthetic mesophase pitch and from about 90 % to about 30 % by weight
3 petroleum-derived isotropic pitch.
- 1 3. The process of claim 2, wherein said step of heat-soaking includes heating the pitch
2 mixture, in an inert atmosphere, at a temperature of from about 350° C to about 450° C.
- 1 4. A process for preparing pitch moldings, comprising the steps of:
2 grinding synthetic mesophase pitch to prepare a powdered synthetic mesophase pitch;
3 grinding partially anisotropic pitch selected from the group consisting of heat-soaked
4 petroleum-derived isotropic pitch and heat-soaked mixture of petroleum-derived isotropic
5 pitch and synthetic mesophase pitch to prepare a powdered partially anisotropic pitch;
6 stabilizing the powdered synthetic mesophase pitch to obtain an at least partially
7 infusible synthetic mesophase pitch powder;
8 mixing the at least partially infusible synthetic mesophase pitch powder with the
9 partially anisotropic pitch to prepare a pitch mixture; and
10 shaping the resultant pitch mixture to prepare a pitch article for subsequent
11 carbonization.
- 1 5. The process of claim 4, wherein the powdered synthetic mesophase pitch is less than about
2 100 μm in at least one dimension.
- 1 6. The process of claim 5, wherein said step of stabilizing the powdered synthetic mesophase
2 pitch includes oxidizing the powdered synthetic mesophase pitch at a temperature of from
3 about 230° C to 300° C, during exposure to flowing air.

- 1 7. The process of claim 6, wherein the powdered synthetic mesophase pitch realizes a weight
2 gain of at least about 6 % in said step of stabilizing.
- 1 8. The process of claim 7, wherein the pitch mixture includes from about 60 % to about 70 %
2 by weight of synthetic mesophase pitch, and from 40 % to about 30 % by weight of partially
3 anisotropic pitch.
- 1 9. The process of claim 8, further comprising the step of carbonizing the pitch article.
- 1 10. A pitch molding prepared by a process comprising the steps of:
2 thermally polymerizing a petroleum-derived isotropic pitch by heat-soaking to obtain
3 an at least partially optically anisotropic pitch; and
4 mixing the at least partially optically anisotropic pitch with an at least partially
5 infusible, synthetic mesophase pitch; and
6 molding the prepared mixture for subsequent carbonization.
- 1 11. A process for preparing pitch fibers comprising the step of:
2 mixing partially anisotropic pitch with synthetic mesophase pitch, wherein the partially
3 anisotropic pitch is selected from a heat-soaked petroleum-derived isotropic pitch and a
4 heat-soaked mixture of petroleum-derived isotropic pitch and synthetic mesophase pitch;
5 spinning the mixture into pitch fibers; and
6 stabilizing the resultant pitch fibers.
- 1 12. The process for preparing pitch fibers according to claim 11, wherein the mixture produced
2 in said step of mixing includes from about 80 to about 40 weight % of the partially
3 anisotropic pitch and from 20 to about 60 % of the synthetic mesophase pitch.
- 1 13. The process for preparing pitch fibers according to claim 11, wherein said step of stabilizing
2 is carried out at a temperature at from about 270 to about 300°C.

- 1 14. The process for preparing pitch fibers according to claim 11, wherein, during said step of
2 stabilization, the mixture of partially anisotropic pitch and synthetic mesophase pitch
3 realizes a weight gain of at least about 6 %.